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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No. 0290112

Art Unit: 1109  
Examiner: H. Myers

In re application  
PETER J. JESSUP ET AL.

Serial No. 08/077,243  
Filed: June 14, 1993

GASOLINE FUEL

The Honorable Commissioner  
of Patents and Trademarks  
Washington, D. C. 20231

Sir:

INFORMATION DISCLOSURE STATEMENT NO. 4

Applicants' attorney recently became aware of the issuance of U.S. Statutory Invention Registration H1305 to Townsend et al., published May 3, 1994, entitled "Reformulated Gasolines and Methods of Producing Reformulated Gasolines," copy enclosed. Because this document has a filing date of July 9, 1992 -- nearly 19 months after applicants' effective filing date of December 13, 1990 -- the H1305 publication is not prior art. However, because the subject matter of H1305 is closely related to the present invention, copies of all art cited in H1305 having a publication date prior to, or possibly prior to, the effective filing date of the present application, but not already submitted to the Examiner in charge of the present application, were obtained. Copies of all this art are submitted herewith, said copies being enclosed in a three-ring binder with the first page of each reference identified by a tab.

Accompanying this IDS No. 4 is the fee of \$210.00 specified in 37 CFR 1.17(p) and 97(c), which fee is for the submission of both IDS No. 4 and No. 5.

In all, 40 references are herewith submitted, the H1305 document plus the following 39 references, none of which is admitted prior art:

1. U.S. Patent 1,409,404 - Ramage - Mar. 14, 1922 - MOTOR FUEL.
2. U.S. Patent 2,032,330 - Roberts et al. - Feb. 25, 1936 - GASOLINE MANUFACTURING PROCESS
3. U.S. Patent 2,593,561 - Herbst et al. - April 22, 1952 - METHOD OF PREPARING RICH-MIXTURE AVIATION FUEL.
4. U.S. Patent 2,857,254 - Thomas - Oct. 21, 1958 - MOTOR FUEL
5. U.S. Patent 2,968,609 - Lutz - Jan. 17, 1961 - PROCESS FOR FRACTIONATING AND BLENDING A REFORMATE TO OBTAIN A HIGH OCTANE GASOLINE.
6. U.S. Patent 3,002,917 - Hamilton - Oct. 3, 1961 - METHOD OF MAKING 104-106 R.O.N. LEADED GASOLINE.
7. U.S. Patent 3,391,077 - Osborne - July 2, 1968 - METHOD FOR IMPROVING THE COMBUSTION CHARACTERISTICS OF GASOLINE.
8. U.S. Patent 3,758,401 - Bridgeford et al. - Sept. 11, 1973 - PRODUCTION OF MOTOR FUELS.
9. U.S. Patent 3,765,848 - Brent - Oct. 16, 1973 - MOTOR FUEL COMPOSITION.
10. U.S. Patent 3,785,790 - Strang - Jan. 15, 1974 - HYDROCARBON FUEL COMPOSITIONS.
11. U.S. Patent 3,873,276 - Haemmerle et al. - Mar. 25, 1975 - ORGANIC COMPOUNDS FOR USE AS ADDITIVES FOR MOTOR FUELS.
12. U.S. Patent 3,902,870 - Rollmann et al. - Sept. 2, 1975 - PROCESS FOR THE PRODUCTION OF GASOLINE.
13. U.S. Patent 3,920,698 - Haemmerle et al. - Nov. 18, 1975 - NEW ORGANIC COMPOUNDS FOR USE AS FUEL ADDITIVES.
14. U.S. Patent 3,980,448 - Haemmerle et al. - Sept. 14, 1976 - ORGANIC COMPOUNDS FOR USE AS FUEL ADDITIVES.
15. U.S. Patent 4,017,268 - Gilley - April 12, 1977 - HYDROCARBON FUEL CONTAINING DISPERSED HYDROGEN AND METHOD OF USE THEREOF.
16. U.S. Patent 4,045,092 - Keller - Aug. 30, 1977 - FUEL COMPOSITION AND METHOD OF MANUFACTURE.
17. U.S. Patent 4,112,889 - Harpman - Sept. 12, 1978 - FUEL SYSTEM AND VAPORIZER FOR INTERNAL COMBUSTION ENGINES.
18. U.S. Patent 4,180,036 - Wolf - Dec. 25, 1979 - FUEL TEMPERATURE CONTROL.
19. U.S. Patent 4,194,886 - Ripple - Mar. 25, 1980 - HALOALKYL HYDROXY-AROMATIC CONDENSATION PRODUCTS AS FUEL ADDITIVES.
20. U.S. Patent 4,205,960 - Bryant - June 3, 1980 - HYDROXYALKYL HYDROXY-AROMATIC CONDENSATION PRODUCTS AS FUEL AND LUBRICANT ADDITIVES.

21. U.S. Patent 4,211,639 - Jackson - July 8, 1980 - METHOD FOR REMOVING IMPURITIES AND RESIDUAL MOISTURE FROM PETROLEUM FUELS.
22. U.S. Patent 4,231,756 - King - Nov. 4, 1980 - GASOLINE AND PETROLEUM FUEL SUPPLEMENT.
23. U.S. Patent 4,244,703 - Kaspaul - Jan. 13, 1981 - FUEL ADDITIVES.
24. U.S. Patent 4,297,172 - Kyle - Oct. 27, 1981 - LOW ENERGY PROCESS FOR PRODUCING GASOLINE-ETHANOL MIXTURES.
25. U.S. Patent 4,336,032 - Kupka et al. - June 22, 1982 - PROCESS FOR STABILIZING MIXTURES OF GASOLINE AND METHANOL.
26. U.S. Patent 4,347,062 - Born et al. - Aug. 31, 1982 - COMPLEXES OF HIGH IRON CONTENT SOLUBLE IN ORGANIC MEDIA AND USABLE AS COMBUSTION ADDITIVES IN LIQUID FUELS.
27. U.S. Patent 4,378,230 - Rhee - March 29, 1983 - METHOD FOR IMPROVING FUEL EFFICIENCY.
28. U.S. Patent 4,420,930 - Beuther et al. - Dec. 20, 1983 - PROCESS FOR OPERATING A FURNACE OR A COMBUSTION ENGINE.
29. U.S. Patent 4,474,580 - MacKenzie et al. - Oct. 2, 1984 - COMBUSTION FUEL ADDITIVES COMPRISING METAL ENOLATES.
30. U.S. Patent 4,684,373 - Vataru et al. - Aug. 4, 1987 - GASOLINE ADDITIVE COMPOSITION.
31. U.S. Patent 4,797,134 - Vataru - Jan. 10, 1989 - ADDITIVE COMPOSITION, FOR GASOLINE.
32. U.S. Patent 4,804,389 - Johnston et al. - Feb. 14, 1989 - FUEL PRODUCTS.
33. U.S. Patent 4,852,992 - Nasu - Aug. 1, 1989 - COMBUSTION AIDS.
34. U.S. Patent 4,895,640 - Jackson - Jan. 23, 1990 - METHOD FOR REMOVING IMPURITIES AND RESIDUAL MOISTURE FROM PETROLEUM FUELS.
35. U.S. Patent 5,004,850 - Wilson - April 2, 1991 - BLENDED GASOLINES.
36. U.S. Patent 5,032,144 - Jessup et al. - July 16, 1991 - OCTANE ENHANCERS FOR FUEL COMPOSITIONS.
37. "PROPOSED REGULATIONS FOR LOW-EMISSION VEHICLES AND CLEAN FUELS", Staff Report, State of California Air Resources Board, August 13, 1990.
38. "Initial Mass Exhaust Emissions Results from Reformulated Gasolines," Auto/Oil Air Quality Improvement Research Program, December 1990.
39. "Development of Ozone Reactivity Scales for Volatile Organic Compounds," William P. L. Carter, Statewide Air Pollution Research Center, EPA Contract CR-814396-01-0, April, 1990, University of California, Riverside, CA 92521.

Applicants obtained a copy of the file history of the Townsend et al. H1305 statutory registration. The real party at interest apparently was the Atlantic Richfield Company (ARCO). All of the many references cited in H1305 were submitted by ARCO to the USPTO, but the file was devoid of any comments by ARCO explaining the pertinence of these documents to reformulated gasolines.

Applicants' attorney and applicant, Peter Jessup, have reviewed the 39 publications listed above, and although the rules no longer require applicants to comment on their pertinence (because all 39 are in the English language, see MPEP §609 and 37 CFR 1.98), applicants nevertheless consider it proper in light of the number of references involved to inform the Examiner as follows.

Applicants can find no meaningful significance in the vast majority of the references listed above to their claimed invention. That is, applicants consider the overwhelming majority of this art to be "background art." For example, the following 17 references are directed to the background art of fuel additives:

2,857,254	Thomas
3,765,848	Brent
3,785,790	Strang
3,873,276	Haemmerle et al.
3,920,698	Haemmerle et al.
3,980,448	Haemmerle et al.
4,194,886	Ripple
4,205,960	Bryant
4,231,756	King
4,244,703	Kaspaul
4,347,062	Born et al.
4,474,580	MacKenzie et al.
4,684,373	Vataru et al.
4,797,134	Vataru
4,804,389	Johnston et al.
4,852,992	Nasu
5,032,144	Jessup et al.

Perhaps the most significant reference is, ironically, a publication which may not be prior art. Specifically, reference #38 listed above, i.e., the Auto/Oil report entitled "Initial Mass

Exhaust Emissions Results from Reformulated Gasolines," has a non-specific publication date of "December, 1990." Given that applicants' effective filing date is December 13, 1990, the applicants do not admit this reference to be "prior" art.

Nevertheless, assuming it were prior art, the Auto/Oil report does not teach or suggest the invention. On pages 4, 5, and 8 the Auto/Oil report discusses the effects of  $T_{90}$ , olefins, aromatics, and MTBE on HC, CO, and  $NO_x$  emissions, the following conclusions, among others, being reached:

(1) lowering  $T_{90}$  lowers HC emissions while lowering olefins increases HC emissions;

(2) lowering  $T_{90}$  increases  $NO_x$  emissions while lowering olefins decreases  $NO_x$  emissions; and

(3) lowering aromatics and adding MTBE reduce CO emissions. Some of these findings are consistent with the discoveries set forth in applicants' specification, and some are not. However, the most important point is that there is no appreciation in the Auto/Oil report of the effect of the two key variables discussed in the specification: RVP and  $T_{50}$ . And since all the claims have limitations on RVP and the great majority have limitations on  $T_{50}$ , it can be seen that the invention is neither disclosed nor suggested by the Auto/Oil report.

Indeed, the Auto/Oil report leads away from the invention by its teachings that all the fuels prepared in the tests described in the report had a target RVP of 8.7 psi (see Attachment IV) and actual RVPs in the range of 8.4 - 8.9 psi (see Attachment V). Since the invention is claimed for use with fuels having much lower RVPs, it can be seen that the Auto/Oil report is unavailing in suggesting the invention.

Of the remaining references, the Examiner's attention is called specifically to the following:

(1) The Examples in U.S. Patent 2,593,561 issued to Herbst et al. disclose aviation gasolines of RVP less than 7.0 psi. For example, at the top of column 11 is disclosed an aviation gasoline of 6.5 psi RVP and  $T_{50} = 204^{\circ}\text{F}$ . However, in addition to the fact that these fuels are leaded, the invention is further distinguished by the fact that one skilled in the art would be led away from using aviation fuels in automobiles. And certainly, there is no suggestion to produce such fuels on a large volume basis for distribution to a number of gasoline stations servicing automobiles.

(2) In U.S. Patent 3,758,401 issued to Bridgeford et al., low RVP fuels are disclosed in Table I. But no other properties, aside from octane value, are disclosed.

(3) Finally, because of its length (over 180 pages) the California Air Resources Board (CARB) staff report "Proposed Regulations for Low-Emission Vehicles and Clean Fuels" (publication No. 37 listed above) must be addressed. The significance of this document in teaching or suggesting the invention can be summed up in one word: none. Admittedly, this report relates to standards for clean gasoline (among other things), but nowhere are any proposed gasoline specifications disclosed, this apparently being left to be accomplished by September 1991 (Staff Report p. 2) -- long after applicants' December 13, 1990 filing date. Thus, if anything, this reference suggests that a need exists for clean fuels, a need satisfied by the present invention.

With respect to any other of the 39 references not specifically discussed above, it is applicants' position that they fall into the category of background art not pertinent to the claimed invention. Thus, overall, applicants believe that the art cited herein does not change the issues involved in this case, but by the same token, applicants' attorney must again caution, as he did in previous IDS submissions, that there is simply no substitute for the Examiner herself reviewing the cited art and coming to her own conclusions as to the pertinence of any of the 39 references.

Applicants submit that the invention as claimed is limited to novel and unobvious methods of use of certain gasolines. Since a copy of each reference has been provided to the Examiner, and because applicants have complied with all other relevant requirements of the rules relating to submission of disclosure statements, the Examiner is respectfully asked to indicate that she has considered the foregoing references by initialing the attached modified PTO form 1449 in the appropriate locations.

Respectfully submitted,



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